

AMENDMENTS TO THE CLAIMS**Claims 1-28 (Canceled)**

**Claim 29 (New)** Rotary machine, such as engine, compressor, pump or the like, comprising:

a stator having an inner cavity with at least an intake port and an exhaust port,  
a first rotor, arranged movably in said cavity, having  
at least two bases and at least a peripheral surface;  
conduits, which connect at least two faces of said at least a peripheral surface;  
a driving shaft extending through said first rotor coaxially therewith,  
a second rotor that is firmly joined to said driving shaft eccentrically,  
characterized in that said second rotor comprises at least a lobe adapted to be received  
and accommodated in a complementary manner in a plurality of recesses, in which said conduits  
terminate.

**Claim 30 (New)** Rotary machine, such as engine, compressor, pump or the like according to claim 29, characterized in that said first rotor is a prism, whose bases are delta-shaped and whose cross-section orthogonally to the axis of rotation, in correspondence of said recesses, is substantially defined as follows:

let a first equilateral triangle be considered along with a second triangle, in which said second triangle is contained in said first triangle with the barycentre thereof coinciding with the barycentre of the latter, as well as with the sides thereof extending parallel to the sides of said first triangle,

let circumference arcs be now drawn out between all of the vertices of said first triangle and externally thereto, with a radius corresponding to the distance to the farthestmost vertex of the second triangle,

let a first, a second and a third semi-circumference be finally drawn out having the extremities thereof corresponding to the vertices of said second triangle, and extending externally thereto, without said first, second and third semi-circumferences coming ever into contact with said circumference arcs.

**Claim 31 (New)** Rotary machine, such as engine, compressor, pump or the like according to claim 30, characterized in that the cross-section of said second rotor is defined substantially as follows:

considering one of said first, second or third semi-circumference, let a fourth and a fifth similar semi-circumferences be now drawn out, in such a manner that the diameters of said fourth and fifth semi-circumferences may belong to a rectangle that does not intersect said same fourth and fifth semi-circumferences, and in such a manner that between a centre of said fourth or said fifth semi-circumference and the outermost point on the other semi-circumference there is a distance corresponding to the height of the second triangle,

let the extremities of said fourth and fifth semi-circumferences be now joined to each other through equal circumference arcs that have their centre on the axis of the segment having the centres of said fourth and fifth semi-circumferences as its extremities, and a radius equal to the height of the second triangle, in such a manner that the convexity of said equal arcs is so oriented as to face said centres of said fourth and fifth semi-circumferences, in which the axis of rotation of said second rotor passes through the centre of one of said fourth and fifth semi-circumferences.

**Claim 32 (New)** Rotary machine, such as engine, compressor, pump or the like according to claim 31, characterized in that the cross-section of the stator is symmetrical and defined substantially as follows:

let a first arc of a circumference be described with the centre thereof at a vertex of said second triangle and the radius thereof corresponding to the distance of said vertex of said second triangle to a farthestmost vertex belonging to said first triangle,

considering the circle, in which said second triangle is inscribed, let now the point be identified, at which said circle intersects the height of said first triangle passing through said vertex of said second triangle,

let a second arc be drawn out having its centre at said intersection point and a radius corresponding to the distance of said vertex of said second triangle to a farthestmost vertex belonging to said first triangle,

let now a third and a fourth arc of a circumference, equal to each other, be drawn out externally to said first triangle, with the centres thereof situated at said vertex of said second

triangle and said point of intersection, respectively, and with a radius corresponding to the distance of said vertex of said second triangle to the nearest vertex of said first triangle, so that they intersect said first and said second arc,

let finally a fifth and a sixth arc of a circumference, equal to each other, be drawn out with the centre thereof on the segment having the intersections of said first and said second arc with each other as its extremities, and with a radius corresponding to the distance of said vertex of said second triangle to the nearest vertex of said first triangle, so that said fifth and said sixth arc of a circumference are tangent to said first and said second arc at the extremities thereof.

**Claim 33 (New)** Engine according to claim 32, characterized in that said conduits inside said first rotor are in the shape of a mixtilinear rectangle in their cross-section.

**Claim 34 (New)** Engine according to claim 32, characterized in that said second rotor comprises internal conduits for carrying cooling and lubrication media.

**Claim 35 (New)** Engine according to claim 32, characterized in that between contiguous ones of said recesses of said first rotor there are provided sealing means.

**Claim 36 (New)** Engine according to claim 32, characterized in that along the perimeter of the bases of said first rotor there are provided guides associated to rollers that are attached to the stator and dampened by elastic means.

**Claim 37 (New)** Engine according to claim 36, characterized in that sealing means are provided along the border of said guides.

**Claim 38 (New)** Engine according to claim 32, characterized in that sealing means are provided at the comers of the peripheral surface and along the perimeter of the bases of said rotor.

**Claim 39 (New)** Engine according to claim 32, characterized in that at least an injector and/or at least a heater plug and/or at least an igniter plug are debouching at the surface of said inner cavity.

**Claim 40 (New)** Engine according to claim 32, characterized in that a valve is provided in the proximity of the at least one exhaust port.

**Claim 41 (New)** Compressor according to claim 32, characterized in that in the inner cavity of the stator there is provided at least a lubricant inlet port situated at a distance from the axis of rotation of the second rotor that is approximately equal to the radius of said fourth or fifth semi-circumference.

**Claim 42 (New)** Compressor according to claim 32, characterized in that said at least a lubricant inlet port is provided along an axis of symmetry of the stator.

**Claim 43 (New)** Compressor according to claim 32, characterized in that on said internal conduits in said first rotor there are provided check valve means.

**Claim 44 (New)** Compressor according to claim 43, characterized in that said check valve means comprise a half-sphere housed in a cavity that is complementary to said half-sphere and provided at the outlet of said conduits, in which said half-sphere is retained by an elastic cord surrounding the first rotor, and in which said cord is contained in a groove provided in the peripheral surface of said first rotor.

**Claim 45 (New)** Compressor according to claim 32, characterized in that between the contiguous recesses of said first rotor there are provided sealing means.

**Claim 46 (New)** Compressor according to claim 29, characterized in that along the perimeter of the bases of said first rotor there are provided guides associated to rollers that are attached to the stator and dampened by elastic means.

**Claim 47 (New)** Compressor according to claim 32, characterized in that sealing means are provided along the border of said guides.

**Claim 48 (New)** Compressor according to claim 32, characterized in that sealing means are provided at the corners of the peripheral surface and along the perimeter of the bases of said first rotor.

**Claim 49 (New)** Compressor according to claim 32, characterized in that at least an inlet port and a delivery port are debouching at the surface of the inner cavity of said stator for the medium to be compressed.